Chemical and Biological Defense Information Analysis Center

CBIAC NEWSLETTER

Serving the CB Defense Community

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A U.S. Department of Defense Information Analysis Center sponsored by Defense Information Systems Agency, ***Defense Technical Information Center***

High-Fidelity Simulation of CB Detection Systems

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Defense Threat Reduction Agency (DTRA)
Alexandria, Virginia

For the past five years, a consortium of organizations led by the Soldier and Biological Chemical Command (SBCCOM) and the Defense Threat Reduction Agency (DTRA) have cooperated to develop a nuclear, chemical, biological, and radiological modeling and simulation toolset. At the heart of the toolset are a distributed simulation-compliant weapons of mass destruction (WMD) environment simulator and simulations of the sensor and detection systems for these environments. The DoD has used this toolset to support the research, development, and testing of and training for nuclear, chemical, biological, and radiological active and passive defense equipment, including detection and warning/messaging systems as well as advanced weapons and weapons systems against WMD targets. While the toolset supports nuclear and radiological environment simulation, the bulk of the resources invested in development of this capability has been directed at chemical and biological detection and messaging systems and associated conventional weapons against such an attack. This article will focus on the chemical and biological aspects of the toolset.

The centerpiece of this simulation toolset is the Nuclear Chemical Biological and Radiological (NCBR) environment simulation. In real time, the NCBR calculates a high-fidelity, three-dimensional (3D) hazard environment as a function of hazard delivery system (source term), meteorological conditions and complex (3D) terrain. The DTRA SCIPUFF and the Naval Surface Warfare Center's VLSTRACK Gaussian puff models provide the means for the NCBR to calculate CBR hazard environments. The NCBR makes the data available to other simulations via full 3D representations of the environments (instantaneous air concentration), 2D grids (dose, deposition, air concentration, and lethal dose, or LD, contours), and at a point via a subscription process. The figure below left portrays a sample 2D conformal (to terrain) NCBR instantaneous air concentration calculation showing the effect of complex terrain on the cloud. SBCCOM has served as the proponent for configuration control and release of the NCBR, and DTRA WMD Analysis and Assessment Center is supporting the migration of the tool to the DoD's emerging High Level Architecture (HLA) standard for distributed simulation.

To provide nuclear environments, the NCBR uses DTRA's External Blast (XBLAST) and Version 6 of Atmospheric Transport of Radiation (ATRv6) as the

See **"High Fidelity Simulation of CB Detection Systems"**
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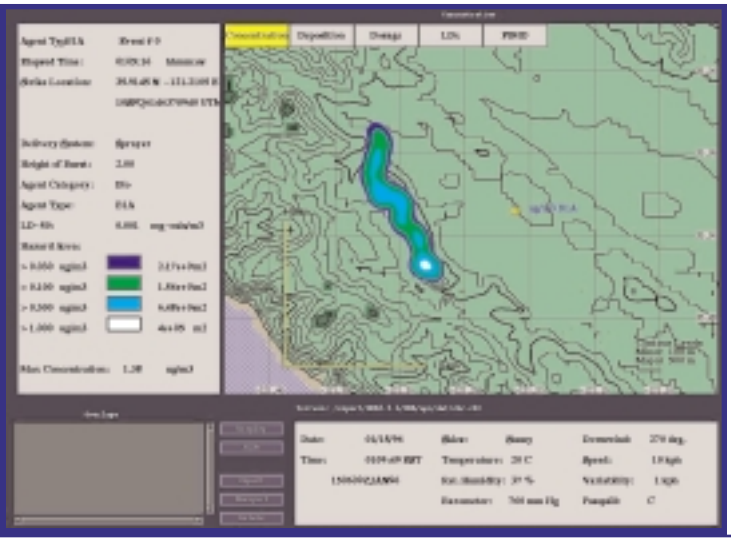
The NCBR utilizes complex terrain in hazard concentration calculations.



ON THE INSIDE

CB NEWS EXCERPTS

The CBIAC has compiled a list of related CB news articles and taken excerpts from them to create brief overviews. The CBIAC does not provide secondary distribution of articles, but can provide directions on where to find an article of interest.

Natick Scientists are the Brains Behind the Membranes
SBCCOM RDA Enterprise, Issue No. 17
March 1999
A new generation of lightweight chemical and biological (CB) protective clothing based on selectively permeable membrane technology is being developed under a Joint Service Defense Technology Objective (DTO) by scientists at the Natick Soldier System Command. The selectively permeable membrane technology will reduce or eliminate the use of carbon in CB protective clothing. The project's end result will be the development of a CB protective duty uniform for the soldier, and thus, the elimination for the need of the chemical protective overgarment. The battle dress uniform (BDU) will be the protective overgarment. The membrane has been successfully tested on the Thermal Manikin. In addition to the warfighter, the new CB clothing system will be useful to the emergency responder, environmental cleanup personnel, medical personal, and pesticide handlers.

Department of Defense Establishes a Weapons of Mass Destruction Advisory Panel
http://defenselink.mil/news/
April 5, 1999
In a news release, Secretary of Defense William S. Cohen announced the formation of an advisory panel to assess domestic response capabilities for terrorism involving weapons of mass destruction (WMD). Headed by Virginia Governor James Gilmore, the WMD Advisory Panel will be a three-year effort and report its findings, conclusions, and recommendations to the President and Congress. The responsibilities of the panel include: assess the federal agency efforts to enhance domestic preparedness for terrorism incidents involving WMD; assess the progress of federal training programs for local emergency responses to WMD incidents; assess deficiencies in programs for response to WMD incidents; assess the appropriate roles of state and local governments in funding effective local response capabilities; and recommend strategies for ensuring fully effective local response capabilities for WMD incidents.

Fort McClellan ends 84 years as South's Showcase
Chapman, Herschel
Army LINK News
http://www.dtic.mil/armylink/news/May1999/a19990520scclellan.html
May 1999
Fort McClellan will cease to exist as an active Army post on September 30, 1999. Due to the 1995 Base Realignment and Closure commission's decision to close the post, actions have been underway to move the U.S. Army Military Police School and the U.S. Army Chemical School from Fort McClellan to Fort Leonard Wood, MO. For 20 continuous years, Fort McClellan was home to the Chemical Corps and Regiment. For 24 continuous years, it was also the professional home to the Military Police Corps and Regiment. The DoD Polygraph Institute will move to Fort Jackson, SC. The museums located at Fort McClellan will also be moved. The Alabama Army National Guard will remain at Fort McClellan as a permanent military presence, along with the Center for Domestic Preparedness, established by the Department of Justice in 1997.

Cepheid Delivers the World's First Fully Automated DNA Analysis System for Rapid, On-Site Detection of Bio-Warfare Agents
http://infoseek.go.com/
May 4, 1999
MIDAS, or Micro-fluidic Integrated DNA Analysis System, has been delivered to the DoD as the world's first micro-fluidic, fully-automated DNA analysis system for the on-site detection of bio-warfare agents in less than 30 minutes. The portable system has been developed for use by soldiers or first response personnel in the field in both a laboratory and mobile detection setting to automatically detect and identify bio-warfare agents.

UN Health Agency Set To Delay Smallpox Destruction
http://infoseek.go.com/
May 21, 1999
The World Health Organization (WHO) will likely decide to delay the destruction of the world's last smallpox virus stocks originally set to be destroyed by June 30, 1999. The stocks, samples of infected skin tissue, are held at the Centers for Disease Control and Prevention in Atlanta, GA, and the Russian State Center for Research on Virology and Biotechnology in Koltsovo in the Novosibirsk region of Russia. The move to delay destruction of the stocks comes at time when fears have been expressed that the virus could be stolen and used as a biological weapon by terrorists or rogue states on unvaccinated people.

USA prepares to treble number of RAID teams
Seigle, Greg
Jane's Defense Weekly
June 2, 1999
In October 1998, the U.S. DoD formed 10 Rapid Assessment and Initial Detection (RAID) teams to respond to a chemical and biological weapons (CBW) terrorist attack. Since the inception of the RAID teams, DoD officials have decided that up to 27 teams of specialized full-time Army National Guard (ARNG) soldiers are needed to sufficiently protect U.S. cities in the event of a CBW attack. The exact number of additional RAID teams has not yet been determined. The RAID teams are the second wave of defense just behind the first responders in the event of a CBW attack. The RAID teams are to move in within 4 hours to assess the chemical and biological agent that is present and to help contain the spread of the agent. They also will be responsible for decontaminating the area. Each RAID team consists of 22 full time ARNG soldiers plus support from other specialists within the reserve component. Additionally, the RAID teams are being trained to respond to nuclear attacks in the U.S.

E-Z-EM, Inc., Announces Agreement On Product for Decontaminating Chemical Warfare Agents
http://infoseek.go.com/
June 2, 1999
E-Z-EM, Inc., announce that its subsidiary, E-Z-EM Canada, Inc., has entered into an agreement for the exclusive manufacture of a decontamination lotion for chemical warfare agents (CWA) known as Reactive Skin Decontaminant Lotion (RSDL). RSDL neutralizes and destroys CWAs on personnel. It has shown to be effective against the G and V families of nerve agents and the H and L families of blister agents.

***See* "CB News Excerpts"**
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"High Fidelity Simulation of Detection Systems"

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means for calculating the blast and prompt radiation environments from tactical nuclear warheads. The NCBR provides these data to the network by publishing axis-symmetric 2D grids and 1D (line) arrays that the receiver rotates about the origin of symmetry to obtain a full 2D or 3D environment.

A second key component of the architecture is CB Modular Semi-automated Forces (CB ModSAF), an Army standard computer generated forces model that the consortium has modified to represent CB battlefields. Consortium contractor ITT Industries–Systems Division has added functionality to ModSAF to represent point biological and chemical sensors, the Fox M93A1 and Joint Lightweight NBC Reconnaissance Systems, NBC message flow, and receive hazard environments from the NCBR via a subscription process. CB ModSAF gives the community a tool to provide operational context to computer-driven (constructive) simulations. ITT is currently working with the Army's Chemical School and Simulation, Training, and Instrumentation Command (STRICOM) to include the CB functionality in the OneSAF distributed baseline. In a complementary effort, consortium contractor Micro Analysis & Design is developing a performance degradation server that will calculate chemical and radiation-induced degradation for ModSAF tasks (e.g., tank target acquisition/track time and weapon load time) and pass them into ModSAF enabling more simulation of the effects of adverse environments.[1]

The suite is rounded out with performance-based simulations of a variety of point and standoff active and passive chemical and biological sensor systems of varying degrees of fidelity.

Two recent applications of the suite demonstrate the applicability of the tools to different missions. The first application, BioSim, was a study supported by OSD, the Joint Program Office for Biological Defense, and the Army's Program Director for Biological Defense to develop and refine tactics, techniques, and procedures for employment of the helicopter-borne lidar detection system, Biological Standoff Detection System (BSDS). BioSim engineers used a distributed simulation architecture to enable the aviators (helicopter pilots) and detection crew (chemical officers) to operate as a team in developing TTP for the BSDS[2]. The goal was to develop BSDS TTP that maximized probability of hazard detection and mitigated risk to the pilots and detection personnel. SBCCOM modeling and simulation team accomplished this by developing a high-fidelity, performance-based simulation of the BSDS sensor which in turn stimulated the BSDS tactical operator's workstation software. This sensor system was "attached" to one of the Army Aviation School's (Ft. Rucker, AL) manned helicopters over the distributed simulation network.

The figure below shows a 3D visualization snapshot from one of the 2.5-hour trials with the hazard cloud and lidar trace shown in false colors. The Army is exploring the feasibility of using the same simulation architecture to support future training of BSDS teams.

The second example of the suite involves the developmental test and evaluation associated with the Army Biodetection Advanced Technology Demonstration, or Bio ATD. To support the Bio ATD, consortium members developed a point biological agent sensor server that calculated hazard agent particle counts for a live sensor array monitoring natural background particle counts. The contractor for the sensor system, Lockheed Librascope, modified the sensors to receive a virtual particle count. These particle counts were then compared against natural backgrounds with a detection logic algorithm to determine the complete system should be sent into alarm. By using this architecture, Bio ATD personnel were able to experiment with different alarm/detection schema for varying hazard environments. In this reachback support testing, only a laptop computer and router/modem were required at the location of the sensors. Environment and sensor simulations provided particle counts to sensors in the field in Glendale, CA, and Dugway Proving Grounds, UT, via standard phone lines from Alexandria, VA.

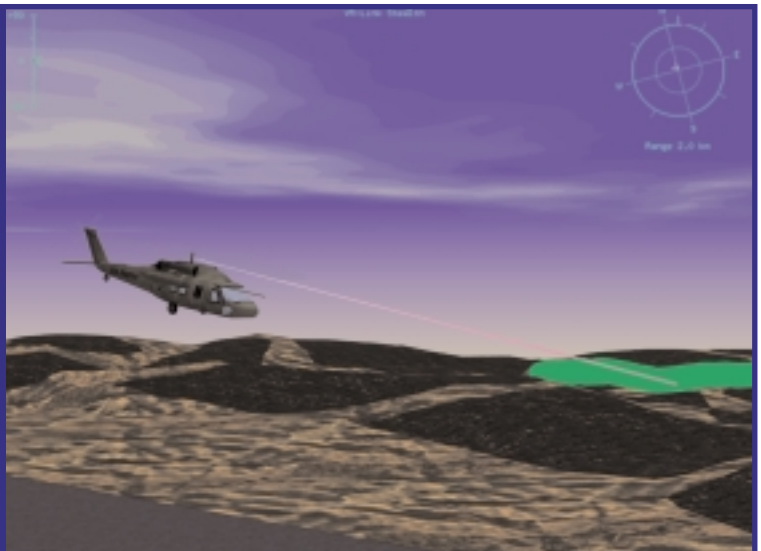
The consortium is currently exploring a variety of applications of this toolset across the range of CB defense materiel item's lifetime, from R&D through test and evaluation and training.

For further information on the suite, contact Dr. John R. White of the SBCCOM Edgewood Chemical Biological Center (*John.White@sbccom.apgea.army.mil)* or Walter Zimmers, Chief of the Defense Threat Reduction Agency, WMD Analysis and Assessment Center (*Walter.Zimmers@dtra.mil*).

[1]LaVine, N.D., et al. "Transferring Ownership of ModSAF Behavioral Attributes," presented at the Spring 1999 Simulation Interoperability Standards Organization Simulation Interoperability Workshop (99S-SIW-097), Orlando, FL, March 1999.

[2]O'Connor, M.J., et al. "Developing Biological Hazard Detection Tactics, Techniques, and Procedures Using Distributed Simulation," presented at the Fall 1998 Simulation Interoperability Standards Organization Simulation Interoperability Workshop (98F-SIW-140.), Orlando, FL, September 1998.

The BioSim architecture enabled helicopter pilots and detection crew to operate as a team.



CONTRACT AWARDS

1. **Self-contained Toxic Environment Protective Outfits**
   Geomet Technologies Inc.
   Germantown, MD
   $6,796,340. March 31, 1999
   By U.S. Army Soldier Systems Command,
   Natick, MA

2. **Research into Regulation of Pathogen-Gene Expression by DNA-Binding Polyamides**
   GeneSoft, Inc.
   South San Francisco, CA
   $7,802,800. May 1999
   By Space & Naval Warfare Systems Center,
   Charleston, SC

3. **Broad Spectrum Vaccine Development Against Yersinia Bacteria, Bacterial Toxins, and Viral Pathogens**
   Maxygen, Inc.
   Redwood City, CA
   $7,697,143. April 1999
   By Space & Naval Warfare Systems Center,
   Charleston, SC

4. **Respiration Equipment**
   Minnesota Mining & Manufacturing (3M) Company
   St. Paul, MN
   $9,935,362. May 1999
   By Defense Supply Center Philadelphia,
   Philadelphia, PA

5. **Improved Point Detection Systems**
   Powertronics Systems, Inc.
   New Orleans, LA
   $5,181,904. May 1999
   By Naval Surface Warfare Center,
   Crane, IN

6. **Department of Defense Modeling and Simulation Information Analysis Center**
   IIT Research Institute
   Chicago, IL
   $193,185,003. May 1999
   By Defense Supply Center Columbus,
   Columbus, OH

7. **Integration and Evaluation Support for Non-stockpile Chemical Materiel Projects**
   Science Applications International Corporation
   San Diego, CA
   $6,033,254. May 1999
   By U.S. Army Soldier & Biological Chemical Command,
   APG, MD

8. **Research to Determine Which Amino Acid Sequencers and Conformations are Most Effective in Promoting Survival and Preventing Death and Behavioral Disturbances in Animal Models of Pathogen Exposure**
   Abitis Pharmaceuticals, LLC
   Dallas, TX
   $5,626,767. May 1999
   By Space & Naval Warfare Systems Center,
   Charleston, SC

9. **Task Order Contract to Support the Medical Chemical Defense Program**
   Battelle Memorial Institute
   Columbus, OH
   $35,661,888. June 1999
   By Defense Logistics Agency

10. **Detector Kit**
    Bachrach, Inc
    625 Alpha Drive
    Allegheny County,
    Pittsburgh, PA 15238
    $98,545. May 1999
    By Defense General Supply Center,
    Richmond, VA

11. **Statistical and Technical Support for the Assessment of Toxic Substances for National Program**
    Battelle Memorial Institute
    505 King Avenue
    Columbus, OH 43201
    $18, 245,749. May 1999
    By U. S. Environmental Protection Agency,
    Washington, DC

12. **Chemical Detector**
    Powertronic Systems, Inc.
    New Orleans, LA
    $55,932. April 1999
    By Naval Inventory Control Point,
    Mechanicsburg, PA

CB News Excerpts

Continued from page 2

Lists and Criteria: Agents and Toxins - BTWC Definitions of Terms and Objective Criteria
The ASA Newsletter (99-2) Issue No. 71
April 15, 1999
Although not considered a comprehensive list or review, an extensive list of human, animal, and plant pathogens and toxins are listed in this **ASA Newsletter** providing a beginning point when attempting to indicate the magnitude of effort involved in the Biological and Toxins Weapons Convention (BTWC) deliberations. This listing covers the actual toxins, viruses, and pathogens, plus the criteria to determine how these items are evaluated and selected for inclusion in the listing.

P4 Laboratories Worldwide
The ASA Newsletter (99-2) Issue No. 71
April 15, 1999
The **ASA Newsletter** provides a listing of the Biosafety Level 4 (BSL4) or P4 laboratories. The P4 laboratories are specifically designed and engineered for work with dangerous and exotic agents, which pose a high individual risk of aerosol-transmitted laboratory infections and life-threatening disease. The P4 laboratories operate with diseases such as Ebola, Marburg, Congo Crimean haemorrhagic fever, and encephalitis. Due to high costs to maintain and operate the P4 laboratories, only a limited number of laboratories remain in operation.

WMD Terrorism and the Role of First Responders
The ASA Newsletter (99-2) Issue No. 71
April 15, 1999
This article provides a viewpoint of the role of the First Responders and how their equipment, training, and coordination can provide the necessary edge to do their jobs and save lives. The article begins by identifying the First Responder within the local community and the resources available to the First Responder at the local level, and at the state and federal levels. Finally, a listing is provided which shows the various First Responder organizations within the local, state, and federal levels along with their responsibilities and response times.

For further information, contact:
Mary Frances Tracy
Tel: (410) 612-6417
E-mail: tracymf@battelle.org

CBIAC ACTIVITIES

Current Awareness and Promotions

The CBIAC attended and staffed an exhibit booth at the following conferences:

- ***The Defense Threat Reduction Agency (DTRA)'s 8th Annual International Conference on Controlling Arms***, held June 1-4, 1999 in Norfolk, Virginia.
- ***The Decon 99 Conference***, held June 7-10, 1999 in Nashville, Tennessee.
- ***The Nuclear, Biological and Chemical (NBC) Symposium and Exhibition***, held June 21-25, 1999 at the Edgewood Area of Aberdeen Proving Ground, Maryland.
- ***1999 Army Medical Nuclear, Biological and Chemical (NBC) Defense Readiness Program Review***, held July 11-16, 1999 in Gettysburg, Pennsylvania.

Products

A new critical review has been added to the CBIAC products: **Wide Area Decontamination: CB Decontamination Technologies, Equipment and Projects.** This report provides the reader with the results of a worldwide Chemical and Biological Wide Area Decontamination literature search and market survey along with a detailed assessment of existing equipment and technologies that may meet the needs of both military and domestic preparedness communities. The assessment also included a detailed examination of the possible benefits of combining the equipment and technologies identified in order to create hardware solutions for immediate implementation.

CBIAC Product Number: CR-99-10
Product Category: Critical Review
Media: Paperback
Price: $60.00
Distribution Limitation: Distribution Unlimited
Classification: Unclassified
Publication Date: April 1999
Availability: CBIAC

Visit the CBIAC web site for an up-to-date listing of our products and current prices. Simplify the ordering process by using the online interactive *Product Request Form*.

Technical Area Tasks

Since the last newsletter, 14 new tasks were awarded, effort was added to 14 ongoing tasks, and 9 tasks have been completed. As of 30 June 1999, a total of 220 TATs have been awarded.

Awarded:

Task	Description/Sponsor
436	Support to the Defense Threat Reduction Agency Chem/Bio ACTP DTRA
457	Provide Expert Scientific Studies and Analysis Services to the USA/ECBC Threat Agent Program USA/ECBC
460	Joint Theater Air Missile Defense (JTAMD) Code Development and Integration BMDO
464	Provide Technical and Administrative Support to the 1999 Scientific Conference on Obscuration and Aerosol Research USA/ECBC
466	Provide Cyclic Testing on Swatches of Candidate Materials for Contamination/ Decontamination USAF/HSW
467	Provide Engineering Services and Technical Assistance for the Modular Decontamination System USA/ECBC
468	Perform Biological and Chemical Evaluation of Dredged Material from the Kill Van Kull Deepening Project USA/COE
469	Upgrade the User Interface for the Environmental Residue Effects Database USA/COE
470	Develop Standardized Guidelines for the Evaluation and Purchase of CB Equipment for Use by Emergency Responders DOC/NIST
471	Provide Technical Support to the Office of the Special Assistant for Gulf War Illnesses OSD/OSAGWI
474	Provide CB Modeling and Programming Support to the ECBC Operations Research/ Analysis Team USA/ECBC
475	Provide NBC Requirements Support to the Directorate of Combat Development USA/CMLS

Completed:

Task	Description/Sponsor
28	Provide NBC Defense Technical Support to NRDEC USA/NRDEC
93	Conduct an Independent Review and Assessment of ECBC's Long Range CB S&T Planning USA/ECBC
118	Provide ILS Planning Support for Navy Collective Protection and CB Detection Systems USN/NAVSEA
179	Provide Technical Support to SBCCOM ACTA Directorate USA/SBCCOM
261	Collect and Analyze Integrated Armor Information USA/NRDEC
295	Maintain and Improve the US BW Program Historical Database DTRA
323	Provide Technical Support to OASD (CP&CBD) OSD/OASD (CP&CBD)
408	Provide Technical Assessment of the CAMIN USA/SBCCOM

CALENDAR OF EVENTS

The CBIAC highlights conferences, symposia, meetings, exhibitions and workshops of interest to the CB community both on our website at http://www.cbiac.apgea.army.mil and in every issue of our newsletter. If you would like to have a CB-related event posted on the CBIAC Calendar of Events, submit the pertinent information to Mary Jo Waters, via E-mail at watersm@battelle.org. Due to space limitations, the CBIAC will accept submissions on a first-come, first-served basis and reserves the right to reject submissions.

1999 MEETINGS

August 25-27
1999 South Carolina Weapons of Mass Destruction Conference
Charleston Place Hotel
Charleston, SC
POC: Christie Johnson or Mark Pointer
Tel: 803-734-8020
Fax: 803-734-8062
E-mail: clhamilton@strider.epd.state.sc.us or
mpointer@strider.epd.state.sc.us
URL: http://www.state.sc.us/epd/groundzero.htm

September 1-3
International Conference on Applied Modeling and Simulation (AMS 99)
Cairns International Hotel
Cairns, Australia
POC: IASTED Secretariat
Tel: 403-288-1195
Fax: 403-247-6851
E-mail: calgary@iasted.com
URL: http://www.iasted.com/conferences/1999/cairns/ams.htm

September 7-9
International Soldier Systems Conference 99 and Soldier Systems APBI
Hilton Hotel
Lake Buena Vista, Florida
POC: Angie DeKleine
Tel: 703-247-2599
Fax: 703-522-1885
Email:adekleine@ndia.org
URL: http://www.natick.army.mil/hooah/apbi/apbi.htm
URL: http://www.ndia.org/interview/register.ndia?~Brochure~996

September 14-17
DSEi99: "Meeting the Challenge of Joint/Combined Warfare"
Chertsey, Surrey, UK
POC: Alison Chesworth
Tel: +44 (0) 181 949 9862
Fax: +44 (0) 181 949 8168
E-mail: anne.heaton-ward@dsei.co.uk
URL: http://www.dsei.co.uk

September 18-20
The 1999 Preempt Conference: The 3rd Annual PREEMPT Conference on Medical Domestic Preparedness Against WMD (Chemical, Biological, & Nuclear) Terrorism
The Washington Hilton Hotel
Washington, DC
Tel: 607-587-4734
Fax: 607-587-4737
URL: http://home.eznet.net/~kenberry/materials/1999conference.htm

September 19-22
SPIE's International Symposium on Industrial and Environmental Sensing co-located with Photonics East®
Hynes Convention Center
Boston, Massachusetts
Tel: 360-676-3290
Fax: 360-647-1445
E-mail: spie@spie.org
URL: http://www.spie.org/web/meetings/calls/pe99/es99_home.html

September 21-23
Combat Vehicles
Ft Knox, Kentucky
POC: Frank Bajowski
Tel: 703-522-1820
Fax: 703-522-1885
E-mail: fbajowski@ndia.org
URL: http://www.ndia.org/events/master98-00.htm#march99

September 21-24
1999 ITEA Annual Symposium
Cobb Galleria Exhibition Hall
Atlanta, Georgia
Tel: 703-631-6220
POC: Dr. Samuel Blankenship
E-mail: sam.blankenship@terec.gatech.edu
URL: http://elsys.gtri.gatech.edu/itea
URL: http://www.itea.org/events/index.htm

September 28-29
Weapons of Mass Destruction and Domestic Preparedness: Integrating First Response and Medical Management
Atlanta, Georgia
Tel: 202-662-9710
Fax: 202-662-9719
URL: http://www.KingPublishing.com

September 29 – October 1
4th Working Conference on Massively Parallel Programming Models
Berlin, Germany
POC: Mr. Martin Simons
Tel: +49 30-314-25213
Fax: +49 30-314-73488
E-mail: simons@cs.tu-berlin.de
URL: http://www.acm.org/ows-bin/is/owa/event.show?event_id_in=10001435

October 1-3
Wilton Park Conference: CBW Terrorism–Risks, Implications and Government Responses
Wiston House
Steyning, West Sussex, UK
POC: Heather Ingrey
Tel: +44 1903-817764
Fax: +44 1903-814217
E-mail: heather.ingrey@wiltonpark.org.uk

October 5-6
Jane's US Chem-Bio Conference
Washington, DC
POC: Marian Sullivan
Tel: 703-683-3700
Fax: 703-836-0118
E-mail: sullivan@janes.com
URL: http://www.janes.com

October 5-7
International NBC Defence Symposium
Shrivenham, Wiltshire, UK
POC: Mrs. Andrea Harrison
Tel: +44 1793 785648
Fax: +44 1793 785325
E-mail: a.harrison@rmcs.cranfield.ac.uk
URL: http://www.rmcs.cranfield.ac.uk/main-cran.shtml?/news/

October 10-14
Pittsburgh '99
9th International ISRP Conference: Respiratory Protection: Emerging Hazards and Solutions for the Coming Millennium
Sheraton Hotel Station Square
Pittsburgh, Pennsylvania
POC: Joann Garvin
Tel: 724-843-7501
Fax: 724- 843-7613
Email: ccsinc2@timesnet.net
URL: http://www.isrp.com

October 11-13
AUSA Annual Meeting and Exhibition
Washington, DC
POC: Diane Fitzgerald
Tel: 703-841-4300 Ext. 661
Fax: 703-243-2589
E-mail: dfitzgerald@ausa.org or ausa-info@ausa.org
URL: http://www.ausa.org/meetings/calendar.htm

October 12-15
The Fifth Asia–Pacific Congress on Animal, Plant and Microbial Toxins
Royal Cliff Beach Hotel
Pattaya, Thailand
Tel: 662-252-0161
Fax: 662-254-0212

October 22-23
3rd International Workshop on Distributed Interactive Simulation and Real-Time Applications (DIS-RT 99)
University of Maryland Hotel and Conference Center
College Park, Maryland
POC: Azzedine Boukerche
Tel: 940-565-4869
Fax: 940-565-2767
E-mail: boukerch@cs.unt.edu
URL: http://www.cs.unt.edu/~boukerch/wdis99/

October 24-28
MASCOTS '99
Seventh International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems
University of Maryland Hotel and Conference Center
College Park, Maryland
POC: Patrick Dowd
Tel: 301-688-0347
Fax: 301-688-0588
E-mail: dowd@computer.org
URL: http://www.ani.univie.ac.at/mascots99

November 1-2
Non-Lethal Weapons '99
Copthorne Tara Hotel
London, UK
POC: Marian Sullivan
Tel: 703-683-3700
Fax: 703-836-0118
E-mail: sullivan@janes.com
URL: http://www.janes.com/defence/

November 6-10
The 4th Congress of Toxicology in Developing Countries
Antalya, Turkey
Tel: 90-312-222 9909
Fax: 90-312-212 2326
E-mail: ek03-k@tr-net.net.tr
URL: http://www.pharmacy.ankara.edu.tr/turktox/

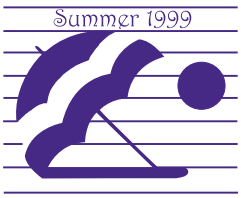
November 7-10
DTIC '99
Annual Users Meeting and Training Conference
DoubleTree Hotel National Airport
Arlington, Virginia
POC: Ms. Julia Foscue
Tel: 703-767-8222 or DSN 427-8222
Fax: 703-767-8228 or DSN 427-8228
Email: jfoscue@dtic.mil
URL: http://www.dtic.mil/dtic/conferences.html

November 15-19
NDIA Aircraft Survivability Symposium
Monterey, California
POC: Charles Wilkins
Tel: (703) 247-2577
Fax: (703) 522-1885
E-mail: cwilkins@ndia.org
URL: http://www.ndia.org

December 5-8
1999 Winter Simulation Conference (WSC 99)
Pointe Hilton at Squaw Peak
Phoenix, Arizona
POC: Dave Sturrock
Tel: 412-741-3727
Fax: 412-741-5635
E-mail: dsturrock@sm.com
URL: http://www.msosa.dmso.mil/mscalendar/default.asp?fctn=evedetails&itemid=673
URL: http://www.wintersim.org

December 6-9
4th Annual Joint Services P2/Hazardous Waste Management Conference & Exhibition:
Environmental Stewardship in the New Millennium
Henry B. Gonzalez Convention Center
San Antonio, Texas
POC: Christy Kline
Tel: 703-247-2587
Fax: 703-522-1885
E-mail: ckline@ndia.org

December 8-9
Weapons of Mass Destruction and Domestic Preparedness: Integrating First Response and Medical Management
Chicago, Illinois
Tel: 202-662-9710
Fax: 202-662-9719
URL: http://www.KingPublishing.com



***See* "Calendar of Events"**
Continued on page 8

Calendar of Events

Continued from page 7

2000 MEETINGS

!!NEW DATES!!! May 7-12, 2000
Chemical and Biological Medical Treatment Symposia Series CBMTS III
Swiss NC Laboratory
Spiez, Switzerland
POC: Richard Price
Tel: 207- 829-6376
Fax: 207-829-3040
E-mail: asa@ime.net
URL: http://www.asanltr.com/

May 15-18
Global Demilitarization
Location TBD
POC: Ira Click
Tel: 703-522-1820
Fax: 703-522-1885
E-mail: iclick@ndia.org

June 13-15
NBC 2000: Symposium on Nuclear, Biological and Chemical Threats in the 21st Century
Helsinki University of Technology
Espoo, Finland
POC: Dr Katri Laihia
Tel: +358-14-602 655
Fax: +358-14-602 501
E-mail: laihia@cc.jyu.fi
URL: http://www.vtt.fi/aut/rm/spt/index1.htm

June 19-23
Eurosatory 2000: International Land Defence Equipment Exhibition
Paris-Le Bourget, France
Tel: 33-1 44 14 58 10
Fax: 33-1 42 30 70 88
E-mail: Coges.eurosatory@wanadoo.fr
URL: http://www.eurosatory.com/anglais/welcome.shtml

July 30 - August 3
2nd International Symposium: Destruction of Chemical Weapons: Technologies and Practical Aspects
Munster, Germany
Tel: 49-5192-136400
Fax: 49-5192-136508
E-mail: expo@munster.de
URL: http://munster.de

October 8-12
Remediation of Contaminated Soil
Munster, Germany
Tel: 49-5192-136400
Fax: 49-5192-136508
E-mail: expo@munster.de
URL: http://munster.de/e2_engl/expo/f_termin.htm

2001 MEETINGS

June 16-21
International Symposia on Protection Against Chemical and Biological Warfare Agents: The 7th CBW Protection Symposium
Stockholm City Conference Centre
Norra Latin, Stockholm, Sweden
Tel: +46-90-106 602 (registrations)
+46-90-106 773 (scientific programme)
E-mail: molofsson@ume.foa.se (registrations)
E-mail: persson@ume.foa.se (scientific programme)
URL: http://www.opcw.nl/cbwsymp/

SELECTED INQUIRY RESPONSES

This section of the newsletter contains selections of recent technical inquiries and responses on subjects we feel are of interest to our readers. The information presented has been edited to conserve space.

Q: Where can I find sources regarding the potential psychological responses and public reaction to a CB weapon attack?

Predicting public reaction to a CB attack is a very complex issue. Information regarding psychological responses and public reaction can be found in the following book:

Chemical and Biological Terrorism: Research and Development to Improve Civilian Medical Response, by the Institute of Medicine and the National Research Council, Copyright 1999, National Academy Press. This book addresses the topics listed below:

- Long-Term Effects of Terrorism (Post-Traumatic Stress Disorder)
- Short-Term Effects of Terrorism (Acute Needs)
- The Mental Health Needs of First Responders
- Neurological vs. Psychological Responses
- Treatment Methods
- Training
- Community Effects
- R&D Needs

Several journal articles provide insightful discussions regarding psychological and social reactions to the CB threats:

- *The Threat of Biological Weapons: Prophylaxis and Mitigation of Psychological and Social Consequences*, by Harry C. Holloway, et al, contained in the August 6, 1997 issue (Volume 278, Number 5) of **The Journal of the American Medical Association**.
- *Psychological Aspects of Chemical Defense and Warfare*, by James W. Stokes and Louis E. Banderet, contained in the 1997 edition (Volume 9, Number 4) of the **Military Psychology** journal.
- *Emergency Preparedness and Response in Israel During the Gulf War*, by Avraham Rivkind et al., published in the **Journal of the American College of Emergency Physicians** October 1997 edition (Volume 30, Number 4).

Additional accounts of psychological responses to CB threats can be found in on-line archives of daily and weekly news reports maintained by several news services.

Q: Is there a public release document that contains physical properties of chemical agents such as decomposition temperature, heat of vaporization, and vapor pressure?

Anser, Inc. has created a chart for the Office of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs, Deputy for Counter Proliferation/Chemical and Biological Defense (OATSD(NCB)(CP/CBD). An electronic version of the chart, approved for public release, is now available. The CBIAC has permission from Anser, Inc to provide the chart in electronic format containing physical properties of choking agents, nerve agents, blood agents, blister agents, vomiting agents, tear agents, and incapacitating agents. Some of the physical properties included on the chart in addition to the properties previously mentioned are molecular weight, boiling point, freezing/melting point, and vapor and liquid density. A copy of the chart can be obtained from Anser, Inc. or the CBIAC.

DTIC® News Release

April 17, 1999

Defense Information Systems Agency
Defense Technical Information Center
DTIC-BCP, Product Management Branch
8725 John J. Kingman Road, Suite 0944
Ft. Belvoir, VA 22060-6218
http://www.dtic.mil/
1-800-225-3842

Public STINET Enhanced!

http://www.dtic.mil/stinet/

Public STINET, which provides free access to citations to unclassified, unlimited documents entered into DTIC's technical reports collection since 1985, has been enhanced with the Fulcrum SearchServer™ search engine and a new "look and feel". The result is improved ease of use, greater search capabilities, numerous new features, and improved communications between DTIC and our customers.

The new "look and feel" provides a "site map" and a "find it" feature which make STINET easier to navigate and find information. There are numerous additional searchable databases on STINET from other DTIC and Federal collections.

Read on to discover some of the new search capabilities and features.

NEW SEARCH CAPABILITIES:

- **Quick Search** - An all fields Quick Search of the unclassified, unlimited technical reports collection can be conducted from the main STINET page. The Quick Search can also be used for a multi-database search on the Scientific and Technical Documents page. Such databases as the R&D Descriptive Summaries (RDDS), the How To Get It, DODISS, the DTIC Thesaurus, and the Technical Reports Collection can be searched simultaneously. The maximum number of citations returned with this search is 25 per database searched.
- **Fielded Search** - Searching by specific field(s) narrows search results. Two fielded search options are available. The Simple Fielded Search allows you to search by several key fields. The Advanced Fielded Search allows you to search from selected fields in the database.
- **Proximity Searching** - Provides a method of locating citations in which the words entered appear within a defined distance of each other.
- **Report Date Searching** - Search for citations to documents by a specific date or date range.
- **Stop Words** - There are no stop words with this new search engine. All words may be used in a search.
- **Custom search results** - Customize your search results by selecting the fields that you want displayed.

NEW FEATURES:

- **Enhanced help** - Help Topics and Help icons are available throughout STINET to help you find your way around.
- **Online Troubleshooting** - An Online Troubleshooting capability has been incorporated to enhance communications between STINET staff members and our customers. This service functions as a web-based electronic bulletin board with capabilities for posting customers' questions and DTIC responses.
- **Shopping cart** - Select multiple items from STINET search results and send one consolidated order.
  Note: Only DTIC registered users may order documents directly from DTIC.

STINET staff continues to listen to our customers' needs. If you have any suggestions/problems/comments, please submit them via the web using the following Comment Form: http://www.dtic.mil/stinet/help/report.html.

If you want to contact a STINET representative directly, call Ms. June Doezema at (703) 767-8047/DSN 427-8047 or Ms. Pat Tillery at (703) 767-8267/DSN 427-8267;
Email: stinet@dtic.mil or bcporder@dtic.mil

Corresponding Enhancements to Secure STINET will follow soon!

Information for the Defense Community

NEW ACQUISITIONS

The following acquisitions may be reviewed at the CBIAC. Information on how to obtain or review any of the listed acquisitions is included for your convenience. The CBIAC is not authorized to distribute duplicates of the listed acquisition.

Alibek, Ken (with Stephen Handelman) **Biohazard–The Chilling True Story of the Largest Covert Biological Weapons Program in the World–Told from Inside by the Man Who Ran It**. New York: Random House, 1998, pp. 306.

"For fifty years, while the world stood in terror of a nuclear war, Russian scientists hidden in heavily guarded secret cities refined and stockpiled a new kind of weapon of mass destruction–an invisible weapon that would strike in silence and could not be traced. It would leave hundreds of thousands dead in its wake and would continue to spread devastation long after its release. The scientists were bioweaponeers, working to perfect the tools of a biological Armageddon. They called it their Manhattan Project. It was the deadliest and darkest secret of the cold war."

CB-167160.01
ISBN 0-375-50231-9
Random House
201 East 50th Street
New York, N.Y. 10022
Phone: (212) 751-2600
Fax: (212) 572-8700

Committee on R & D Needs for Improving Civilian Medical Response to Chemical and Biological Terrorism Incidents, Institute of Medicine and the National Research Council. **Chemical and Biological Terrorism–Research and Development to Improve Civilian Medical Response** Washington, D.C.: National Academy Press, 1999.

"*Chemical and Biological Terrorism* identifies the R & D efforts needed to implement recommendations in key areas: pre-incident intelligence detection and identification of chemical and biological agents, protective clothing and equipment, early recognition that a population has been covertly exposed to a pathogen, mass casualty decontamination and triage, use of vaccines and pharmaceuticals, and the psychological effects of terror. Specific objectives for computer software development are also identified."

CB-166564.01
D756199
ISBN 0-309-0195-4
National Academy Press
2101 Constitution Ave., NW
Box 285
Washington, D.C. 20055
1-800-624-6242

Falkenrath, Richard A., Robert D. Newman and Bradley A. Thayer. **America's Achilles' Heel–Nuclear, Biological, and Chemical Terrorism and Covert Attack**. Cambridge, MA: MIT Press, 1998, pp. 354.

"Nuclear, biological, and chemical (NBC) weapons delivered covertly by terrorists or hostile governments pose a significant and growing threat to the United States and other countries. Although the threat of NBC attack is widely recognized as a central national security issue, most analysts have assumed that the primary danger is military use by states in war, with traditional military means of delivery. The threat of covert attack has been imprudently neglected.

Covert attack is hard to deter or prevent, and NBC weapons suitable for covert attack are available to a growing range of states and groups hostile to the United States. At the same time, constraints on their use appear to be eroding. This volume analyzes the nature and limits of the covert NBC threat and proposes a measured set of policy responses, focused on improving intelligence and consequence-management capabilities to reduce U.S. vulnerability."

CB-167195.01
ISBN: 0-262-56118-2
MIT Press
Massachusetts Institute of Technology
Cambridge MA 02142
1-800-356-0343

For further information, contact:
Richard M. Gilman
Tel: (410) 612-6415
E-mail: gilman@battelle.org

PEGEM Version 3.0 Release

The Ballistic Missile Defense Organization (BMDO) announces software release of the Post-Engagement Ground Effects Model (PEGEM) version 3.0 second quarter 1999. PEGEM version 3.0 includes all capabilities within the current version 2. 1, PLUS:

* Enhanced user friendliness via new Graphical User Interface (GUI)
* Unitary chemical warhead modeling from ground level to exoatmospheric altitudes
* Cruise missile / UAV capability
* Substantial increase in threat definitions, designs, adaptability
* Option to utilize Hazard Prediction and Assessment Capability (HPAC) for transport and dispersion
* Standard files and scenarios to facilitate analysis

PEGEM is developed by MEVATEC Corporation under the authority and direction of BNMO and provides high explosive chemical and biological weapon ground hazard assessment for multiple threat types and times-of-interest. PEGEM code end-to-end calculations as well as parametric analysis capabilities can be applied to offensive deployments and intercepts. Model outputs consist of deposition, dosage, and fragment kinetic energy grids, as well as instantaneous concentrations and casualty grids at user-specified times-of-interest on assets-of-interest.

To request PEGEM 3.0, contact:

Government Program Engineer:
Mr. Doug Schaefer
Ballistic Missile Defense Organization
AQE
7100 Defense Pentagon
Washington,DC 20301-7100

MEVATEC Program Manager
Mr. William K. Moore
MEVATEC Corporation
1525 Perimeter Parkway, Suite 500
Huntsville, AL 35806
Phone: 256-890-8000
Fax: 256-890-0000
e-mail: bill-moore@mevatec.com

PLEASE HELP US TO UPDATE OUR MAILING LIST!

The ***CBIAC Newsletter*** is posted in PDF format on the CBIAC home page. It is also mailed in hardcopy format upon request. Due to the number of reorganizations and mergers, numerous mailing addresses in our database are now obsolete. If your organization has been renamed, or if you have changed locations, job titles, office symbols, etc, please provide us with the updated information. If a copy of the newsletter is being sent to a staff member who has retired, please let us know.

To continue to receive your free hardcopy of the ***CBIAC Newsletter***, send your corrections and updates to the attention of Mary Jo Waters by fax [(410) 676-9703] or email (watersm@battelle.org).

☐ **Add**
☐ **Delete**
☐ **Modify**

Name: _____

Organization: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Country: _____

Tel: _____ **Fax:** _____

E-mail: _____

Old Address Label

Chemical and Biological Defense Information Analysis Center

CBIAC

Serving the DB Defense Community

The **CBIAC Newsletter** is a quarterly publication of the Chemical Warfare/Chemical and Biological Defense Information Analysis Center (CBIAC). The CBIAC is a Department of Defense (DoD) Information Analysis Center (IAC), administratively managed by the Defense Information Systems Agency, **Defense Technical Information Center** (DISA/**DTIC**) under the DoDIAC Program Office.

Government agencies and private industry under contract to the Department of Defense can contact the CBIAC for informational products and services. The CBIAC serves as the center for the acquisition, compilation, analysis and dissemination of information relevant to chemical warfare and chemical and biological defense technology.

The CBIAC is located in Building E3330, Aberdeen Proving Ground - Edgewood Area, Maryland 21010. For further assistance or information, visit or contact the CBIAC Monday through Friday from 8:00 a.m. to 4:00 p.m., EST:

Mailing Address: CBIAC
P.O. Box 196
Gunpowder Branch,
APG, MD 21010-0196

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E-mail: cbiac@battelle.org

The Contracting Officer's Technical Representative for the CBIAC is Mr. Joseph D. Williams. He can be reached through his E-Mail address Joseph.Williams@sbccom.apgea.army.mil
or at the following address:

CDR USA SBCCOM
Edgewood Chemical Biological Center
ATTN: AMSSRB-RRT-OM (Joe Williams E3330)
5183 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5424

CBIAC
P.O. Box 196
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FY 1999 Products Catalog Update II

Wide Area Decontamination: CB Decontamination Technologies, Equipment and Projects

CBIAC Product Number: CR-99-10 **Product Category:** Critical Review **Media:** Paperback **Price:** $60.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: April 1999 **Availability:** CBIAC
Description: This report provides the reader with the results of a worldwide Chemical and Biological Wide Area Decontamination literature search and market survey along with a detailed assessment of existing equipment and technologies that may meet the needs of both military and domestic preparedness communities. The assessment also included a detailed examination of the possible benefits of combining the equipment and technologies identified in order to create hardware solutions for immediate implementation.

Demilitarization Technologies for Biological and Toxin Weapons

CBIAC Product Number: CR-98-08 **Product Category:** Critical Review **Media:** Paperback **Price:** $25.00
Distribution Limitation: U.S. Government Agencies Only **Classification:** Unclassified
Publication Date: September 1998 **Availability:** CBIAC
Description: This report provides the reader with a basic understanding of the history, principles, and procedures underlying the destruction (demilitarization) of biological and toxin weapons as discussed in the open literature. A survey of the open literature is presented to ascertain the current state of knowledge in this field. An extensive list of information resources is provided for those who wish to pursue the topic further.

The Year 2000 (Y2K) Millenium Bug A Chemical and Biological Defense Community Perspective

CBIAC Product Number: CR-98-07 **Product Category:** Critical Review **Media:** Paperback **Price:** $15.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: September 1998 **Availability:** CBIAC
Description: The Y2K problem is pervasive and may affect the CB defense community in several ways. Knowledge of the problem is essential in order to plan and implement actions to repair or replace hardware or software that may fail once the transition from December 31, 1999 to January 1, 2000 occurs. This CR provides information to aid both the DoD and its contractors in general terms, and provides specific references to the Y2K compliance status of various programs within the CB defense community.

The Emergency Responder's Ability to Detect Chemical Agents

CBIAC Product Number: CR-98-06 **Product Category:** Critical Review **Media:** Paperback **Price:** $15.00
Distribution Limitation: U.S. Government Agencies, their approved contractors, state and local government agencies
Classification: Unclassified **Publication Date:** July 1998 **Availability:** CBIAC
Description: This critical review addresses the chemical agent detection and identification capability of emergency responders throughout the United States. Test data involving chemical warfare agents and commercial detection and identification devices are very limited, but a test program is currently under way. This Critical Review identifies the chemical detection equipment currently employed by emergency responders and discusses its usefulness for the detection and identification of chemical warfare agents.

Critical Review of Surface Sampling Technologies for Volatilizing Liquid Chemical Agents

CBIAC Product Number: CR-98-05 **Product Category:** Critical Review **Media:** Paperback **Price:** $25.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: April 1998 **Availability:** CBIAC
Description: This critical review supports the XM279 surface sampler development program. It identifies and describes surface sampling technologies and equipment that could aid the M22 Automatic Chemical Agent Alarm in detecting volatile liquid chemical warfare agents on surfaces. The CR presents a technical evaluation of six preliminary design concepts and discusses future development of volatilization technologies.

Critical Review of Non-Lethal Grenade Technologies and Lethality Evaluation Criteria

CBIAC Product Number: CR-98-04 **Product Category:** Critical Review **Media:** Paperback **Price:** $25.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: April 1998 **Availability:** CBIAC
Description: This critical review presents the results of a market investigation conducted to identify existing non-lethal technologies for integration into a 66 mm grenade for use with the Light Vehicle Obscuration Smoke System (LVOSS). This CR identifies and analyzes three specific non-lethal technologies and 12 existing non-lethal grenades. This report also identifies potential evaluation criteria for use in considering these technologies.

CBR-D Curricular Materials

CBIAC Product Number: SOAR-99-12 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $75.00
Distribution Limitation: U.S. Government Agencies and their contractors: EXPORT CONTROLLED **Classification:** Unclassified
Publication Date: March 1999 **Availability:** CBIAC
Description: This CD-ROM provides trainee guide and lesson plan files to supplement SOAR-98-06, CBR-D Computer Aided Instruction. The lesson plans and trainee guides support the multimedia presentation in SOAR-98-06. Because of the coverage of NBC operations in confined spaces, this set may also be of interest to the domestic preparedness community. The files are in Microsoft® Word 97.

Disaster Preparedness Operation Specialist (DPO) Curricular Materials

CBIAC Product Number: SOAR-99-11 **Product Category:** State-of-the-Art Report **Media: CD-ROM** **Price:** $75.00
Distribution Limitation: U.S. Government Agencies and their contractors: EXPORT CONTROLLED **Classification:** Unclassified
Publication Date: March 1999 **Availability: CBIAC**
Description: This CD-ROM provides trainee guide and lesson plan files to supplement SOAR-98-07, Disaster Preparedness Operation Specialist (DPO) Computer Aided Instruction. The lesson plans and trainee guides support the multimedia presentation in SOAR-98-07. Because of the coverage of NBC operations in confined spaces, this set may also be of interest to the domestic preparedness community. The files are in Microsoft® Word 97.

Tactical NBC Information Tool

CBIAC Product Number: SOAR-99-10 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $95.00
Distribution Limitation: U.S. Government Agencies Only

Tactical NBC Information Tool . . .*continued*

Classification: Unclassified **Publication Date:** June 1998 **Availability:** CBIAC

Description: This CD-ROM (version 1.0) provides a complete set of NBC planning tools for use in tactical headquarters settings. Topics covered include agent characteristics, staff responsibility, the assessment tool, defense units, equipment, operations orders, threat, and Army Universal Task List (AUTL) tasks conditions, and standards. The interactive nature of this tool greatly simplifies the NBC defense planning and training process. Included are a range of tools and manuals on NBC decontamination, protection, contamination avoidance, potential military CB agents and compounds, field behavior of agents, and medical management of chemical casualties. This CD-ROM would also be valuable to the domestic preparedness, force protection, and counter terrorism communities. This CD-ROM requires an Intel Pentium® or equivalent processor, a VGA or better display, 8 Mb RAM, 100 Mb free hard drive space, and Microsoft Windows 95® or 3.11®.

Technical Approach Options for Indoor Air Modeling

CBIAC Product Number: SOAR-98-09 **Product Category:** State-of-the-Art Report **Media:** Paperback **Price:** $75.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: August 1998 **Availability:** CBIAC

Description: This publication provides an assessment of 23 mathematical models that describe airflow, heat distribution, and contaminant transport within buildings. Each of the 23 models examined employed one of four approaches: well-mixed volume, computational fluid dynamics, plume dispersion, or empirical. Four models are recommended for further examination based on the needs of the Domestic Preparedness program. These were the U.S. EPA's RISK model, Battelle Memorial Institute's Emissions Transport Model, Gradient Corporation's Plume Dispersion Model, and the Subway Environmental Simulation developed by Parsons Brinkerhoff for the DOT. Descriptions and validation studies for these four models are presented.

CINC NBC Information Tool

CBIAC Product Number: SOAR-98-08 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $95.00
Distribution Limitation: U.S. Government Agencies Only **Classification**: Unclassified
Publication Date: December 1997 **Availability:** CBIAC

Description: This CD-ROM (version 1.0) provides a complete set of NBC planning tools for use in high-level headquarters settings. Topics covered include agent characteristics, staff responsibility, the assessment tool, defense units, equipment, OPLAN, threat, and UJTL. The interactive nature of this tool greatly simplifies the NBC defense planning process at headquarters level. This CD-ROM would also be valuable to the domestic preparedness, force protection, and counter terrorism communities. This CD-ROM requires an Intel Pentium® or equivalent processor, a VGA or better display, and Microsoft Windows 95®.

Disaster Preparedness Operation Specialist (DPO) Computer Aided Instruction

CBIAC Product Number: SOAR-98-07 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $125.00
Distribution Limitation: U.S Government Agencies and their contractors: EXPORT CONTROLLED **Classification:** Unclassified
Publication Date: December 1997 **Availability**: CBIAC

Description: This 2 CD-ROM set (version 1.0) provides a multimedia supplement to the U.S. Navy's Disaster Preparedness Operation Specialist course. Topics covered include radiological detection equipment, dosimeters, computer indicator equipment, CBR protective equipment, self and buddy aid, chemical detection equipment, and chemical decontamination equipment. The presentations contain text, graphics, and video clips that support each of the topics. Because of the coverage of NBC operations in confined spaces, this set may also be of interest to the domestic preparedness community. This set requires an Intel Pentium® or equivalent processor, a VGA or better display, and Microsoft Windows 95®.

CBR-D Computer Aided Instruction

CBIAC Product Number: SOAR-98-06 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $125.00
Distribution Limitation: U.S Government Agencies and their contractors: EXPORT CONTROLLED **Classification:** Unclassified
Publication Date: December 1997 **Availability:** CBIAC

Description: This 2 CD-ROM set (version 1.0) provides a multimedia supplement to the U.S. Navy's CBR-D course. Topics covered include personal protective equipment, improved point detection system, chemical agent point detection system, chemical warfare directional detector, chemical agent detection kit and paper, collective protection system, chemical agent self and buddy aid, interim biological agent detection system, and RADIACs and radiation dosimeters. The presentations include text, graphics, and video clips that support each of the topics. Because of the coverage of NBC operations in confined spaces, this set may also be of interest to the domestic preparedness community. This set requires an Intel Pentium® or equivalent processor, a VGA or better display, and Microsoft Windows 95®.

Assessment of Chemical Detection Equipment for HAZMAT Responders

CBIAC Product Number: SOAR-98-05 **Product Category:** State-of-the-Art Report **Media:** Paperback **Price:** $75.00
Distribution Limitation: U.S. Government Agencies, their approved contractors, state and local government agencies
Classification: Unclassified **Publication Date:** July 1998 **Availability:** CBIAC

Description: This publication provides an assessment of the detection equipment required by HAZMAT responders in order to deal with a terrorist incident involving chemical warfare agents. A representative locale was selected, and the incident response system was analyzed. Commercially available and military chemical warfare agent detection equipment is identified and analyzed based on the requirements of emergency responders. This analysis yielded recommendations for chemical detection equipment for use by emergency responders to meet their domestic preparedness needs.

State-of-the-Art Report on the Australia Group Chemicals

CBIAC Product Number: SOAR-98-04 **Product Category:** State-of-the-Art Report **Media:** Paperback **Price**: $75.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: June 1998 **Availability:** CBIAC

Description: This publication provides a condensed, quick reference summary of information on each of the 54 chemicals listed by the Australia Group. For each listed chemical, this report provides the chemical name, formula, structure, synonyms, trade names, Chemical Abstract Service number, CWC schedule number (where applicable), civilian uses, and the chemical warfareagents associated with the particular chemical (where applicable). The civilian uses provided represent examples of the industrial applications of dual use chemicals, and is not an exhaustive list.

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